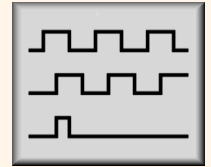


# Incremental Encoder with hollow shaft ITD 21 A 4 Y22

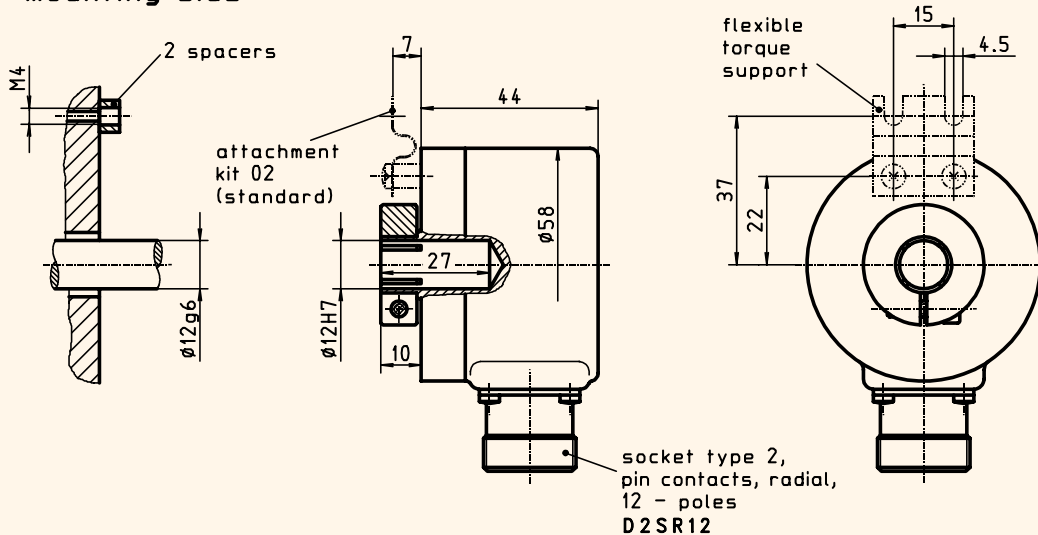


## Qualities:

- High-class hollow shaft incremental encoder
- **Number of pulses**, up to **6000** pulses per revolution
- Mounting at torque support
- TTL- or HTL-output signals
- Socket radial
- Hollow shaft going through optional



mounting side



ITD 21 A 4 Y22

drawing-no.: 029 - 1 Y22

## Mechanical data:

Housing		light-alloy metal, black, powder coated	
Design style	<b>A 4</b>	A 4	
Attachment kit	<b>02</b>	02 ( standard )	( ref. datasheet "Attachment kit's ..." )
Protective class	<b>IP65</b>	IP 65	according to DIN 40 050, IEC 529
Construction principle		LED with glas slotdisc	
max. revolution ( mechanical )	$n_{max}$	$\leq 8000$ rpm	( observe frequency limit )
Admissible motor-shaft play	axial	$\leq 0.25$ mm	
	radial	$\leq 0.1$ mm	
Starting torque	at 20 ° C	$\leq 1$ Ncm	
Vibration	55... 2000 Hz	$\leq 100$ m/s <sup>2</sup>	according to DIN IEC 68 part 2-6
Shock	11 ms	$\leq 300$ m/s <sup>2</sup>	according to DIN IEC 68 part 2-27
Hollow shaft diameter	d	12 mm	
Weight		approx. 300 g	

# Incremental Encoder with hollow shaft

## ITD 21 A 4 Y22



### Electrical data:

• Number of pulses	Z	XXXX	1000 to 6000 pulses per revolution
• Execution of electronic	TTL	T	TTL-output signals supply voltage: $U_B = 5 \text{ VDC} \pm 5\%$ (poling error safe)
	HTL	H	HTL-output signals supply voltage: $U_B = 8 - 30 \text{ VDC}$ (poling error safe)
• Output signals	A, B, N + Inv.	NI	2 square-wave pulse trains phase shifted by $90^\circ (\pm 10^\circ)$ electr. + zero pulse, $90^\circ$ electr. length + inverting (refer to output signals-diagram)
Pulse ratio			pulse : pause = 1 : 1 $\pm 10\%$ at 30 kHz
Flank steepness			$\geq 15 \text{ V}/\mu\text{s}$
Frequency limit	$f_G$	TTL	300 kHz
Output load current	$I_{\text{Load}}$	TTL	$\leq 70 \text{ mA}$
Input current	$I_{\text{max}}$		$\leq 100 \text{ mA}$ (without load)
Permissible cable length			$\leq 100 \text{ m}$ (Thalheim-cable)
• Type of connection		D2SR12	socket type 2, pin contacts, radial; 12-poles
• Operating temperature range		S	$0^\circ \text{C}$ to $+70^\circ \text{C}$

### Options:

• Execution of electronic	R	TTL-output signals supply voltage: $U_B = 8 - 30 \text{ VDC}$ (poling error safe)
• Operating temperature range	E	$0^\circ \text{C}$ to $+100^\circ \text{C}$

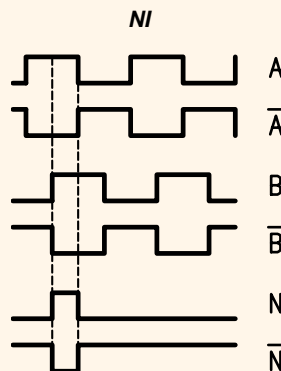
### Accessories:

Connector, for version D2S..12 **S2BG12** connector type 2, bush contacts, straight, 12-poles

### Connection table:

PIN-no.		signals
PIN 5	=	A
PIN 6	=	A inverted
PIN 8	=	B
PIN 1	=	B inverted
PIN 3	=	N
PIN 4	=	N inverted
PIN 12	=	+ $U_B$
PIN 10	=	0 V
PIN 2	=	+ $U_{\text{sensor}}$
PIN 11	=	0 V <sub>sensor</sub>
PIN 7	=	NC
PIN 9	=	shilding/housing

### Output signal diagram:



**Pulse trains:**  
Clockwise rotation when looking at the end of the shaft. (mounting side)

### Ordering example:

<b>ITD 21</b>	<b>A 4</b>	<b>Y22</b>	<b>2500</b>	<b>H</b>	<b>NI</b>	<b>D2SR12</b>	<b>S</b>	<b>12</b>	<b>IP65</b>	<b>02</b>
Incremental encoder ITD 21	Design style A 4	Mechanical variante Y22 = look at the drawing	Number of pulses 2500 pulses / revolution	Execution of electronic $U_B = 8-30 \text{ VDC HTL-output}$	Output signals A-, B-, N-track + inverting	Type of connection socket type 2, pin contacts, radial, 12-poles	Operating temperature $0^\circ \text{C}$ to $+70^\circ \text{C}$	Hollow shaft diameter 12 mm	Protective class IP 65	Attachment kit variante 02